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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/453,526	12/03/1999	HARRY B. SMITH	A7302	2759

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EXAMINER

GESESSE, TILAHUN

ART UNIT	PAPER NUMBER
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2684

DATE MAILED: 07/29/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 09/453,526	<b>Applicant(s)</b> SMITH, HARRY B.	
	<b>Examiner</b> Tilahun B. Gesessse	<b>Art Unit</b> 2684	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 18 April 2005.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-95 is/are pending in the application.
- 4a) Of the above claim(s) 1-11, 20-22, 25, 30-33, 35, 52-54, 57-60 and 63-68 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 12-19, 23-24, 26-29, 34, 36-51, 55-56, 61-74, 80--82, 89, 94-95 is/are allowed.
- 6) ☒ Claim(s) 75-79, 83-88, 90 and 91 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☒ Claim(s) 92-93 are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### **Status of claims**

1. This in response to applicant's amendment and response filed April 18,2005, in which claims 1-11, 25 and 35 have been canceled and 20-22, 30-33, 52-54,57-60 and 63-68 have been withdrawn from consideration and 12-19,24, 26-29, 34,36-51,55-56,61-95 are pending.

### **Election/Restrictions**

2. Newly submitted claims 92-93 are directed to an invention that is independent or distinct from the invention originally claimed for the following reasons: the newly filed claims are directed to a radar system and are not related to previous conventional a versatile stand alone antenna and receiving system and iteratively processing technique. Radar system is a system that transmits a signal to an object and receives a signal bounced back signal from the object, accordingly , signal measured to determine a speed. Therefore, radar system is not related to a communication receiver that evaluates signal to noise ratio.

Since applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for prosecution on the merits. Accordingly, claims 92-93 are withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

Claims 20-22, 30-33, 52-54, 57-60 and 63-68 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected claims, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 12/16/02. applicant is advised that non elected claims withdrawn from consideration. Upon response to this office action, applicant is advised to cancel the non elected claims.

***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 75-79 and 83-88, 90-91 are rejected under 35 U.S.C. 102(e) as being anticipated by Martin et al (US patent No. 6,189,915) "Martin"

4. Claims 75, Martin discloses a versatile stand alone antenna and receiving system (see figure 5 and abstract) comprising

Martin discloses means (processors in figure 5) for providing a nearly continuous estimate of a received signal amplitude at, (see column 3, lines 16-column 4, line 48) wherein processing takes place, the means for providing employs surrogate carrier signals of known values that are substituted for actual signals and which are compared

to each of several predetermined values to select one that gives the closest match as determined by an enhanced signal-to-noise ratio that results when alternate plus carrier half cycles match subsequent negative half cycles so as to determine a signal estimated result because these half cycles are inherently the same amplitudes see column 3, lines 16-column 4, line 48 and figure 9 and column 3, lines 65-column 4, lines 10 and figure 2).

Clam 76. Martin discloses all limitations as explained above in claim 75. Martin further discloses providing the option of duplicating the system to create multiple probes that operate in parallel so as to minimize time required system to select a correct signal probe of the multi probe process (see column 2, lines 20-68).

Claims 77. Martin discloses all limitations as explained above in claim 76. Martin further discloses at the carrier frequency and operable to accommodate rapidly fluctuating received signals (see abstract).

Claims 78, Martin discloses a means for it receiving a. receive signal (see figure 5 and abstract) within a wide system bandwidth, wherein the bandwidth is chosen such that noise having a level substantially equal to the level of the receive signal is permitted to be received automatically into the svstem, and means for combining one surrogate carrier values with the receive signal, and means for determining which of the surrogate carrier values is nearest to the level of the receive signal (see column 1, liens 25-37 and column 3 , lines 16-column 4, lines 48). To illustrate, a phased array antenna employed to controllably form a beam and canceled interference by choosing the bandwidth of the received signal by phased array antenna.

Claim 79. Martin discloses a versatile stand alone antenna and 'receiving system comprising'. means for searching and acquiring a desired signal in a time synchronization and detection process resulting in synchronization of a timing clock that samples a analog-to-digital converters so as to establish a system reference phase and thereafter introduce an appropriate sequence of surrogate signal estimates, wherein a typical search involves a set of such surrogate value a in which one of them causes a signal to erupt from the background noise so as to create a vastly improved signal-to-noise ratio (column 1, lines 62-column 2 ,line 34 and (see column 8, lines 39-49 and figure 2).

Claim 83, Martin discloses a versatile stand alone antenna and receiving system (see figure 1 and abstract) comprising.

Martin discloses a single stand-alone array antenna operable to receive a plurality of overall receive signals (plurality of antennas of figure 5), a processor (figure 5) that receives the overall receive signals and detects and acquires very weak signals without the assistance of a pilot pulse, a diversity receive method or any pre-established information related to signal conditions of the overall receive signals (abstract and (see column 8, lines 39-49 and figure 2).

Claim 84. Martin discloses a versatile stand alone antenna and receiving system (abstract and figure 5) comprising-. a single stand-alone array antenna operable to receive a plurality of overall receive signals', a processor that receives the overall receive signals and enhances a detestability and acquisition of useful information related to the receive signals by comparing the respective receive signals to multiple

predetermined surrogate values and determining. when the amplitude of the receive signals is closest to one of the surrogate carrier amplitude values (column 3, lines 65- column 4 line 30 and (see column 8, lines 39-49 and figure 2). Martin weighs amplitude and values of noise and signal.

Claim 85. . Martin discloses all limitations as explained above in claim 1. Martin further discloses the determining of the receive signals in said processor is performed in-parallel with each other to speed up an overall processing time (see figure 5 and abstract and (see column 8, lines 39-49 and figure 2).

Claim 86, Martin discloses a method for estimating the strength of a carrier signal in a receive system,( figure 5 and abstract) the method comprising: iteratively comparing a series of predetermined surrogate signal amplitudes to the amplitude of the carrier signal', and detecting a match between one of the predetermined surrogate signal amplitudes and the amplitude of the carrier signal (see column 8, line39-49).

Claim 87. Martin discloses all limitations as explained above in claim 1. Martin further discloses said iteratively comparing and detecting steps are performed within two or less cycles of the carrier signal (see column 8, lines 39-49 and figure 2).

Claim 88. . Martin discloses all limitations as explained above in claim 87. Martin further discloses a process of integrating a plurality of different independent signal-plus-noise samples is avoided as unnecessary.

Claim 90, Martin discloses all limitations as explained above in claim 87. Martin further discloses the two or less cycles of the carrier signal constitute a slight departure from real-time processing and enables processing of a wider bandwidth of received

signals in the receive system as compared to the bandwidth of received signals present in systems that utilize at least one of integration processing and real-time processing.

Claim 91. Martin discloses all limitations as explained above in claim 90. Martin further inherently discloses realizing an increase in signal-to-noise ratio due to the processing of the wider bandwidth of received signals (see abstract).

***Allowable Subject Matter***

5. Claims 12-19, 23-24, 26-29, 34, 36-51,55-56,61-62,64,69-74,80-82 ,89 94-95 are allowed over the prior art of record.

The following is an examiner's statement of reasons for allowance: the prior art does not teach a storage device capable of storing said digital values and operable to create a matrix comprising a plurality of rows and columns wherein said rows and columns contain information based on said digital values', a processor operable to iteratively process said digital values to determine said information and place said information in locations within said matrix.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."



**Conclusion**

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Farzaneh (US patent No. 6,266,528) discloses an antenna monitor collects statistics about the received signal strength of each antenna in a cooperating antennas array over long period of time and base station using an array of antenna elements obtain spatial diversity, samples, of received signal strength (abstract).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tilahun B Gesesse whose telephone number is 571-272-7879. The examiner can normally be reached on flex.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nay Maung can be reached on 571-272-7882. The fax phone number for the organization where this application or proceeding is assigned is 571-2738300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

**TILAHUN GESESSE**  
**PRIMARY EXAMINER**

7/22/05